

# Knowledge Attitudes and Practices of Parents on Acute Respiratory Tract Infection in Children Under Five Years in Saudi Arabia: Systematic Review

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## Abstract

The purpose of this systematic review is to synthesize existing literature on Saudi Arabian parents' knowledge, attitudes, and practices (KAP) about acute respiratory infections (ARI) in children under the age of five. A thorough search of online databases was done, and the selected articles were evaluated for relevance to the study issue. The review contained five papers that met the inclusion criteria. The findings demonstrated a lack of awareness among mothers concerning respiratory illnesses, including symptoms, causes, and proper treatment. Mothers' views and actions toward ARI management were found to be influenced by cultural and socioeconomic influences. Educational interventions have been shown to improve mothers' knowledge and practices. The investigations did, however, emphasize the prevalence of misconceptions and the use of alternative treatments. The research shows that focused educational programs and interventions are needed to improve mothers' understanding of ARI management and to encourage evidence-based methods. It is critical to address cultural and socioeconomic issues while building effective tactics. Finally, this research gives insights into Saudi Arabian parents' knowledge and attitudes around ARI in children, emphasizing the significance of comprehensive interventions to improve ARI management in this population.

**Keywords:** Knowledge, Attitudes, Practices of Parents, Acute Respiratory, Tract Infection in Children.

## 1. INTRODUCTION

Acute respiratory infections (ARI) have a significant economic impact and are a leading cause of morbidity and mortality among infants. It constitutes the primary rationale for minors seeking health services. In developing nations, the management of respiratory tract infections is a critical public health issue (Bham et al., 2016). Acute respiratory infections are among the leading causes of morbidity and mortality among infants that are less than five years old. This is regarded as one of the most significant reasons why minors are admitted to health services, as it imposes a substantial economic burden (Alluqmani et al., 2017).

More than 12 million children perish annually from acute respiratory infection on a global scale. They pass away prior to their fifth birthday, with a significant number passing away in their first year. Acute respiratory infections (ARI) are widely recognized as a prevalent contributor to both morbidity and mortality among pediatric patients (Khan et al.,

2018). As estimated by the World Health Organization (WHO), respiratory infections contribute to 6% of the overall global disease burden. This proportion is notably higher in comparison to the burdens associated with malaria, human immunodeficiency virus (HIV) infection, diarrheal disease, and cancer. Over 12 million hospital admissions annually are attributed to ARIs in children younger than 5 years (Tazinya et al., 2018).

Upper respiratory tract infections (URIs) and lower respiratory tract infections (LRIs) are the two classifications of acute respiratory infections. Rhinitis, sinusitis, tonsillitis, pharyngitis, laryngitis, epiglottitis, and ear infections are all classified as URIs. Pneumonia and bronchiolitis are LRIs (Bhalla et al., 2019). A multitude of risk factors, including but not limited to inadequate immunization, breastfeeding, low income, and literacy rate, all contribute to the heightened prevalence of acute respiratory infections among children. Breastfeeding is a significant factor in the prevention and control of respiratory tract

infections in children younger than five years (Alsalem & As, 2013). As reported by healthcare facilities, the estimated incidence of ARI morbidity among children under the age of five in Saudi Arabia was fifty percent (Alluqmani et al., 2017).

The majority of research conducted in the area of acute respiratory tract infection control has centered on identifying knowledge, attitude, and practice gaps in the community in order to determine where and when intervention is necessary and to educate the general public about such diseases (Saeed & Awadalla, 2020). The child's health is significantly influenced by the mother's knowledge and attitude towards respiratory diseases and other such conditions, given that in almost all societies the mother is the primary caregiver for the child. Therefore, maternal health knowledge, attitudes, and practices have a direct impact on the child's survival and overall health status. Acute respiratory illnesses are generally amenable to home treatment (Bham et al., 2016).

Numerous fatalities can be averted if mothers possess knowledge of the symptoms and indicators of infection; it is their responsibility to ensure that their children are comfortable during periods of illness (Mahalakshmi et al., 2023). The knowledge, attitude, and behavior of mothers significantly contribute to the reduction of morbidity among children under the age of five. Many risk factors have been identified as contributors to the high mortality rate associated with ARI. To begin with, socioeconomic conditions have a well-established reputation for impacting human health. Another indicator to evaluate health status is education, with a particular emphasis on females (Khan et al., 2018).

One of the studies that was undertaken sought to assess the knowledge, attitudes, and practices of mothers concerning acute respiratory infections (ARI) in children under the age of five. To achieve this, the pediatrics department at DarulSehat hospital administered a cross-sectional survey to which three hundred mothers were invited to participate. A total of 35 individuals residing in the vicinity had at least one infant below the age of five and sought medical attention at the hospital with accompanying female companions. There were 335 minors examined in total. 68% of the 335 infants were afflicted with respiratory infections. Cough was the most prevalent

symptom in acute cases (40%), while pneumonia was the most frequent complication (83%). Mothers exhibited a commendable understanding of the symptoms, exacerbating environmental factors, aggravating conditions, and complications associated with acute respiratory infections, according to the study. Their approach to acute respiratory infections was suitable, which was established through prompt consultation with a certified medical professional. As the study's findings indicate, an increase in the literacy rate positively influences the knowledge, attitudes, and practices of mothers (Bham et al., 2016).

Based on the findings of a research study examining the knowledge, attitude, and practice of parents concerning childhood acute respiratory infections, which involved the simple random sampling of 150 parents, the research revealed that over 50% of the participants possessed inadequate knowledge pertaining to acute respiratory infections. As a rule, the majority of respondents were opposed to the idea of consulting a physician. A significant proportion of the participants held a pessimistic view of consulting a physician with regard to acute respiratory infections in childhood, with the remaining half possessing adequate knowledge in this area (Khan et al., 2018).

The evaluation of parents' knowledge and attitudes toward practice has garnered considerable interest among researchers. Concerning the use of potentially hazardous herbs and treatments, there are misunderstandings, including those held by parents. Additionally, there is a lack of understanding regarding the proper administration of antibiotics when treating young children. The study emphasized the criticality of conducting extensive research in the domain of optimizing the administration of suitable antibiotics, alongside taking the requisite actions to address acute respiratory infections in young children (Alluqmani et al., 2017).

In Saudi Arabia, where acute respiratory tract infections (ARI) are prevalent and costly to treat among children under the age of five, little is known regarding the knowledge, attitudes, and practices (KAP) of parents regarding these infections. For the development of effective interventions to prevent and manage ARI in this vulnerable population, it is vital to comprehend

the KAP of parents. As a result, the purpose of this systematic review was to compile the extant literature regarding the KAP of Saudi Arabian parents concerning ARI in children under the age of five.

## **2. RATIONALE OF THE REVIEW**

This systematic assessment of parents' knowledge, attitudes, and practices (KAP) about acute respiratory tract infections (ARI) in children under the age of five in Saudi Arabia is crucial in tackling a critical public health issue. ARI is a prominent cause of morbidity and mortality among babies globally, including Saudi Arabia. Understanding Saudi parents' KAP is critical for creating effective strategies to prevent and manage ARI in this susceptible demographic. This review's findings can help to educate public health planning and interventions, improve parental decision-making, identify research gaps, take into account country-specific factors, and contribute to global health efforts to reduce the burden of ARI. This systematic study has the potential to significantly improve the health outcomes of children under the age of five in Saudi Arabia and worldwide.

### **Objective**

To compile the extant literature regarding the KAP of Saudi Arabian parents concerning ARI in children under the age of five.

### **Evaluation of Evidence**

Khan et al. (2022) study sought to assess parents' knowledge, attitudes, and practices about acute respiratory infections in children. Acute respiratory infection is an infection that can cause difficulty breathing. According to the study, acute respiratory infections (ARI) are a major cause of mortality and morbidity in children, particularly those under the age of five. When a cross-sectional descriptive survey design was used, 150 parents were selected for the study through simple random sampling technique, and the sample size was calculated by Rao soft with confidence interval and margin of error, the number of study participants was 150, with 36 males and 64 females. The study's findings revealed that more than half of the participants had poor knowledge of acute respiratory infections, and the majority of participants had a negative attitude toward consulting a doctor, as the findings revealed that half of the participants had poor knowledge and the rest had good knowledge of acute respiratory

infections in childhood, and the majority of participants had a negative attitude toward consulting a doctor.

A cross-sectional study in Khartoum State, Sudan, aims to assess mothers' knowledge, attitude, and practice regarding acute lower respiratory tract infections (ALRTIs) in children under the age of five. The study involved 300 moms, with data obtained using a self-structured questionnaire. According to the statistics, the majority of moms (88.7%) are aware of what pneumonia is. However, when the knowledge score was assessed using ten multiple-choice questions, it was discovered that more than two-thirds of the mothers had inadequate understanding of the symptoms, complications, and risk factors associated with ALRTIs. Socio demographic data revealed a link between knowledge levels and socioeconomic status. In terms of attitude, the majority of moms (91%) thought it was critical to consult a doctor if they suspected their kid had pneumonia. Traditional and alternative medicine were preferred by 43.3% of moms, whereas 13.7% preferred taking antibiotics at home. Overall, people's attitudes regarding obtaining medical treatment were negative, with socio demographic data indicating a link. In terms of practice, 90% of mothers sought medical attention when symptoms and signs of ALRTIs appeared. However, 34% self-medicate with over-the-counter medicines and antibiotics readily available at home. In general, obtaining medical treatment was seen negatively, with socio demographic data indicating a link between practice levels. Finally, this study reveals mothers' lack of understanding, unfavorable attitudes, and poor practices about ALRTIs in young infants. Interventions to raise awareness, promote suitable attitudes, and support good behaviors in obtaining medical treatment for children with ALRTIs are needed (Saeed et al., 2020).

A cross-sectional study conducted in Al Mukalla, Yemen, sought to investigate mothers' knowledge, attitudes, and practices on the management and prevention of acute respiratory tract infections (ARIs) in children under the age of five. The Random Walk Method was used to recruit 581 randomly selected moms for the study, and data were collected using a pre-tested interviewer-administered questionnaire. According to the findings, 52.3% of urban moms had good understanding of ARIs, with a higher awareness of harmful indications of

infection such as chest in drawing and fast breathing. Positive opinions about antibiotic use were more frequent in urban moms (78.4%), while negative attitudes were more prominent in rural mothers (88.7%). According to the study, urban women were more likely to use antibiotics without a prescription and not finish the entire course, whereas rural mothers relied on home remedies. Although urban moms had more knowledge and good views about ARI than rural mothers, this knowledge did not translate into adequate antibiotic use in both contexts. These findings highlight the importance of focused interventions to bridge the knowledge, attitudes, and practices gap in order to promote rational antibiotic use for the prevention and management of ARIs among Yemeni mothers (Al-Noban, & Elnimeiri, 2022).

The purpose of the cross-sectional study was to measure mothers' knowledge and practices in managing minor illnesses in children under the age of five, as well as to investigate the relationship between demographic characteristics and knowledge and practices. The study, which took place in Irbid, Jordan, included 348 moms who visited comprehensive health centers.

A survey containing true or false questions about the care of fever, upper respiratory tract infections (URTIs), and diarrhea in children was used to examine mothers' knowledge and practices. To evaluate relationships between mother demographic characteristics and knowledge levels, the data were examined using frequencies, distribution, and bivariate correlations and t-tests. According to the data, the mean number of correctly answered questions about fever management was 8.6, 4.9 for URTI management, and 6.4 for diarrhea management. Significant favorable relationships were discovered between the mother's age, household income, level of education, and number of children and fever and/or URTI awareness and practices. The study emphasizes the significance of assessing and improving mothers' knowledge and habits in the management of mild illnesses in children. It implies that nurses and other healthcare practitioners can play an important role in educating moms on how to treat minor diseases in their children. This literature emphasizes the importance of focused treatments and training programs to provide mothers with the knowledge and skills they need to guarantee

safe and effective care of mild illnesses, decreasing complications and hospitalizations (Abu-Baker et al., 2013).

Yulianita, et al. (2023) examined three predictors of family health management in preventive and curative care for toddlers with acute respiratory infections: knowledge, attitude, and anxiety. Survey approach employed in this investigation. The study included 392 mothers. Logistic regression was used. Family health management was significantly correlated with knowledge, attitude, and anxiety. The result suggested that knowledge and positivity improve family health management. Family health management for toddlers with ARI will be less effective as anxiety rises.

### **3. METHODS**

A comprehensive systematic review was carried out in order to fully map the synthesis of current research about Saudi parents' knowledge, attitudes, and practices surrounding acute respiratory infections in children under the age of five. The audit included a PRISMA flow chart to achieve the maximum level of process correctness; it also conformed to the best practice principles supplied by the best practice standards; and the guidelines established by Arksey and O'Malley (2005) for scoping review methodology were strictly followed.

#### **Search Strategy**

A search was conducted in October 2023 through the online databases PubMed, Google Scholar, and Cochrane to discover literature relevant to the inquiry. This systematic review titled "Knowledge, Attitudes, and Practices of Parents on Acute Respiratory Tract Infection in Children under Five Years in Saudi Arabia" used a search approach. "Knowledge," "attitudes," "practices," "parents," "acute respiratory tract infection," "children under five years," and "Saudi Arabia" were selected as key topics. For each notion, a detailed list of related keywords and synonyms was developed. The search strings were created by combining terms inside and across concepts using Boolean operators: ((knowledge OR awareness OR perception OR understanding) AND (attitudes OR beliefs OR opinions) AND (practices OR behaviors OR habits) AND (parents OR mothers OR fathers OR caregivers) AND (acute respiratory tract infection OR pneumonia OR bronchitis OR flu OR common cold OR

Asthma) AND (children under five years OR infants OR toddlers) AND (Saudi Arabia OR Kingdom of Saudi Arabia OR KSA). Using titles, abstracts, and full texts, articles were assessed for relevance to the research issue. Relevant data were retrieved from the included papers, and the articles' quality and bias risk were analyzed using relevant techniques. This search method focused on recent literature from credible sources to provide an up-to-date picture of parental knowledge, attitudes, and practices surrounding acute respiratory tract infections in Saudi children under the age of five.

### **Inclusion & Exclusion Criteria**

To be considered for inclusion, studies must be published in English. Articles that did not address the topic "Parents' knowledge attitudes and practices about acute respiratory infections in children under five years of age in the Kingdom of Saudi Arabia" and did not include the topic in the title or abstract were excluded.

#### **Inclusion Criteria:**

- Studies published within the last five years (2014-2023).
- Studies conducted in Saudi Arabia.
- Studies focusing on parents' knowledge, attitudes, and practices related to acute respiratory tract infection in children under five years.
- Quantitative study designs.
- Studies conducted on a sample of parents or caregivers of children under five years.
- Studies published in English.

#### **Exclusion Criteria:**

- Studies published before 2014.
- Studies conducted in countries other than Saudi Arabia.
- Studies that do not specifically address parents' knowledge, attitudes, and practices regarding acute respiratory tract infection in children under five years.
- Studies focusing on healthcare professionals' perspectives without including parents or caregivers.
- Qualitative studies, animal studies, case reports, and reviews.
- Studies not published in English.

#### **Selection process**

A review of the search on October 1, 2023 yielded 120 results. After eliminating duplicate

studies, 50 remained. After reviewing the titles and abstracts, 30 studies were removed because they did not meet the inclusion criteria. Thus, 20 studies were carefully assessed for eligibility; 15 studies were excluded because they did not describe the original studies. Therefore, 5 investigations were included in the Systematic review (see Table 1 and Figure 1).

#### **Data Extraction**

A review search was carried out, all titles and abstracts were given, inclusion and exclusion criteria were applied, the reasons for inclusion and exclusion were documented, and duplicates were removed. The four phases of the scope review procedure were shown using a PRISMA flowchart. Figure 1 displays the Scope Review flowchart. Table 1 contains the collected features of the included studies (n = 5). The data that had been summarized was then analyzed. The author(s) of each article, the publication year, the study objective, the results, and the conclusions were retrieved and examined.

### **4. RESULTS**

The results chapter analyzes the findings of many studies that looked at mothers' knowledge, attitudes, and practices (KAP) on respiratory illnesses in young children. The research was carried out in Saudi Arabia and aimed at determining mothers' degree of knowledge, attitudes concerning respiratory infections, and practices in managing and seeking healthcare for their children.

**Alluqmani et al. (2017)** study aims to assess Saudi mothers' knowledge, attitudes, and practices (KAP) on acute respiratory infections in infants under the age of five in the Kingdom of Saudi Arabia. The study included 733 mothers from various regions of the Kingdom who were admitted to a random sample of primary health care clinics. Mothers in Saudi Arabia were interviewed and asked to complete a pre-designed questionnaire as part of the study from February to June 2017. The questionnaire was divided into four sections: demographics of mothers, knowledge, attitudes, and practices. According to the study's findings, the average age of moms is 41.3 years, and most mothers (41.9%) had been married for 10-20 years. The majority of participants (53.9%) had a university degree, and 44% were working mothers. Furthermore, the study's findings revealed that the majority of participants possessed adequate knowledge. Acute respiratory infections are a

condition that affects the upper and lower respiratory tracts. Pneumonia is one of the complications of acute respiratory infections, as is antibiotic overuse, bacterial resistance, and cough is the most prevalent symptom. Poor awareness is linked to the usage of medications and the need to see a doctor if the children have acute respiratory infections. In 46% of the participants, the maternal knowledge score was good, whereas 54% had insufficient knowledge. More over half of the participants had poor maternal attitudes and practices. The study concluded that the majority of Saudi women lacked information, attitude, and practice when it came to acute respiratory infections, because greater comprehension and enough knowledge were substantially connected with young age, short term of marriage, and higher education.

One study in Saudi Arabia sought to assess parents' knowledge and practices about acute respiratory infections in children under the age of five. The study employed a pre-experimental approach and purposive sampling to choose 104 parents. The researchers utilized a structured interview schedule and checklist to measure parents' knowledge and practices about acute respiratory infections before and after the educational program. In the pretest, parents had an average cognitive score of 2.33 0.886, which improved dramatically to 8.89 0.81 in the posttest. The average difference of 6.56 indicates that the educational program was effective in increasing the knowledge of the parents. Similarly, the mean overall score for the upper respiratory infection exercise increased by 13.64 points from 6.85 1.413 at pretest to 20.49 1.115 at posttest. This shows that parents' practices have improved as a result of the instructional program. The computed "t" values for the awareness and practice scores were 7.24 and 2.914, respectively, at a significance level of 0.05, according to statistical analysis. Following the implementation of the educational program, there was a considerable improvement in parental understanding and practices addressing acute respiratory infections. Researchers proposed special schooling and education programs for moms to help avoid acute respiratory infections in children under the age of five. These seminars will teach moms about the precautions they should take to avoid upper respiratory illnesses. In addition, the literature emphasizes the necessity of infection prevention in young children, such as rigorous hand washing while caring for children with

respiratory infections. Overall, the relevance of parental awareness and actions in preventing acute respiratory tract infections in young children was highlighted in this study (**Dharmarajlu et al., 2022**).

Abusaad & Hashem, (2014) conducted a study aimed to assess mothers' learning needs regarding pneumonia in children under the age of five. The study was carried out as a descriptive study on a sample of 160 mothers and their children attending Al-Mosheir Hospital in Sakaka, Saudi Arabia. An interview questionnaire was used to collect data, which addressed socio demographic criteria of the moms as well as various questions about their knowledge and perspective of pneumonia. According to the statistics, the majority (51.1%) of moms with children suffering from pneumonia were between the ages of 20 and 29. Furthermore, 75% of mothers had a good degree of understanding about pneumonia, and 94.1% of their children had had episodes of pneumonia. Furthermore, 64.3% of mothers had a favorable impression of pneumonia, although 97.1% of their children had been harmed by it. The study discovered a link between mothers' level of knowledge and perception and the occurrence of pneumonia in their children. In conclusion, this study found that mothers generally had adequate knowledge and a decent degree of perception about pneumonia among their hospitalized children. It is worth noting, however, that pneumonia recurrence was observed, particularly among children of young mothers. According to the literature, addressing mothers' gaps in knowledge and perception, particularly about preventative and management techniques, may contribute to a reduction in the recurrence and severity of pneumonia in children. As a result, educational programs aimed at mothers and improving their understanding of pneumonia are critical in lowering the disease's impact on young children.

**AlOtaibi & AlAteeq (2018)** conducted a study aimed to analyze parents' and guardians' knowledge and practices about asthma in their children. The findings demonstrated that the majority of participants had a moderate level of asthma awareness, with mothers having greater knowledge levels than other groups. However, the individuals had significant misconceptions about asthma treatments. While the majority of parents reported giving their children routine asthma therapy and visiting the clinic on a regular basis, a considerable proportion relied

on alternative approaches such as massaging or using homemade treatments during acute asthma attacks. These findings highlight the importance of focused education and awareness programs to address knowledge gaps and promote evidence-based methods for asthma management in children. Improving asthma control necessitates measures at both the hospital and community levels to ensure that children with asthma receive the best possible treatment. According to the statistics, the majority (51.1%) of moms with children suffering from pneumonia were between the ages of 20 and 29. Furthermore, 75% of mothers had a good degree of understanding about pneumonia, and 94.1% of their children had had episodes of pneumonia. Furthermore, 64.3% of mothers had a favorable impression of pneumonia, although 97.1% of their children had been harmed by it. The study discovered a link between mothers' level of knowledge and perception and the occurrence of pneumonia in their children. In conclusion, this study found that mothers generally had adequate knowledge and a decent degree of perception about pneumonia among their hospitalized children. It is worth noting, however, that pneumonia recurrence was observed, particularly among children of young mothers. According to the literature, addressing mothers' gaps in knowledge and perception, particularly about preventative and management techniques, may contribute to a reduction in the recurrence and severity of pneumonia in children. As a result, educational programs aimed at mothers and improving their understanding of pneumonia are critical in lowering the disease's impact on young children.

Alhammad et al., (2020) study aimed determine the level of childhood asthma control and its relationship to parental understanding of asthma

**Table1.** Summary of Selected Studies

Author	Aim	Results	Conclusion
Dharmarajlu et al. (2022)	To identify the knowledge and practice of parents regarding upper respiratory tract infections (URTIs) in children under the age of five.	The results of the study demonstrated a considerable improvement in parents' knowledge and habits following the introduction of an educational program on URTIs. With a mean difference of 6.56, the mean knowledge score climbed from 2.330.886 in the pre-test to 8.890.81 in the post-test. Similarly, with a mean difference of 13.64, the mean practice score increased from 6.851.413 in the pre-test to 20.491.115 in the post-test. Both	This study found that the URTI education program improved parents' knowledge and practices. The results showed that parents' URTI knowledge and prevention skills improved significantly. This suggests that educational interventions can prevent sickness and reduce URTIs in children under five. Specialized educational programs for moms should emphasize preventive measures like handwashing to boost prevention efforts.

and its management and assess asthma control in children aged 4 to 11, the researchers used a validated childhood asthma control test (C-ACT). They also examined parents' and guardians' asthma knowledge during visits to an asthma clinic. The survey was completed by 177 (74.4%) of the 238 parents who were invited to participate. According to the findings of the study, 61.6% of both parents and children scored 19 or lower on the C-ACT, indicating inadequate asthma management. In addition, only 54.2% of parents understood how inhaled salbutamol (an asthma relief medicine) works, and only 37.9% understood how inhaled corticosteroids (an asthma controller medication) works. Only around a quarter of parents had received an asthma action plan. According to a multinomial logistic regression analysis, parents who were unfamiliar with their children's prescription names and when to apply inhaled corticosteroids were independent predictors of uncontrolled asthma in children. Parents who did not know their children's medicine names were 6.1 times more likely to have an uncontrolled asthmatic kid, whereas parents who did not know when to administer inhaled corticosteroids were 2.1 times more likely to have an uncontrolled asthmatic child.

These data emphasize the link between poor asthma control in children and parental asthma medication awareness. It is critical to provide comprehensive education to parents on asthma care and medication use in order to enhance asthma management and prevent exacerbations in children. Healthcare practitioners may empower parents to properly manage their child's asthma and reduce the burden of the condition on their lives by providing them with accurate knowledge and an asthma action plan.

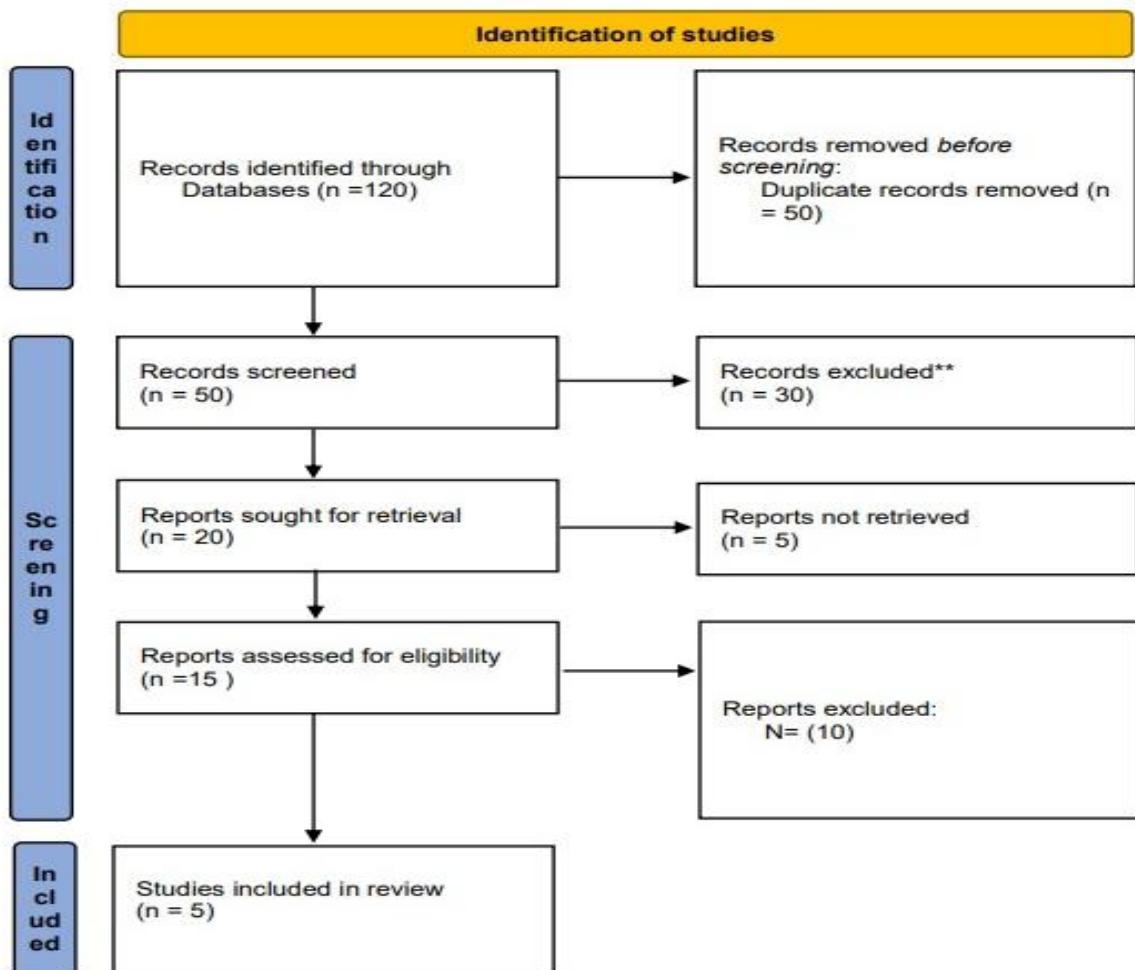
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		the awareness and practice ratings had computed 't' values of 7.24 and 2.914, which were statistically significant.	Improved parental understanding and practices around URTIs can reduce young child morbidity and mortality.
Alhammad et al., (2020)	To assess the association between parental knowledge of asthma and childhood asthma control.	A total of 177 parents, with an average age of 38.8 years, took part in the study. The children's average age was 7.8 years. 28.2% of the parents smoked, and 46.3% had a college education. To assess asthma control, the Childhood Asthma Control Test (C-ACT) was employed, with a score of 19 or lower indicating inadequate control. The C-ACT was found to have a score of 19 or lower in 61.6% of both parents and children, indicating inadequate asthma control. In terms of parental understanding, 54.2% understood how inhaled salbutamol works, but just 37.9% understood how inhaled corticosteroids function. Furthermore, just 25% of parents had an asthma action plan. According to multinomial logistic regression analysis, parents who did not know their children's medication names were 6.1 times more likely to have a child with uncontrolled asthma (C-ACT score of 19 or lower), and those who did not know when to use inhaled corticosteroids were 2.1 times more likely.	The study found a link between poor asthma management in children and parental understanding of asthma and its treatments. The findings emphasize the importance of providing thorough education and assistance to parents in order for them to understand their child's asthma and follow proper management measures. It is critical to provide parents with appropriate information, including medication information and asthma action plans, in order to optimize childhood asthma control. Healthcare practitioners should prioritize educational interventions to empower parents to properly manage their child's asthma, minimizing the frequency and severity of asthma exacerbations in the long run.
AlOtaibi & AlAteeq (2018)	To explore the knowledge and practice of parents and guardians about asthma in their children.	According to the survey, the majority of participants (79.6%) had a moderate level of asthma knowledge. Mothers had a higher level of expertise than the other categories. However, the individuals had major misconceptions about asthma treatments. Furthermore, while the majority of parents reported giving their children routine asthma therapy and visiting the clinic on a regular basis, a significant proportion relied on non-conventional approaches during acute asthma attacks, such as massaging or using homemade medicines.	The study found that parents and guardians of asthmatic children had a moderate degree of asthma knowledge. However, there were significant gaps in understanding about asthma treatments. To improve asthma control, it is critical to increase educational efforts and raise knowledge among caregivers about asthma, dispel drug myths, and encourage evidence-based practices. These interventions should be undertaken at both the hospital and community levels to ensure that children with asthma receive the best possible care.
Alluqmani et al. (2017)	To assess Saudi mothers' knowledge, attitudes, and practices (KAP) on acute respiratory infections in	The results showed that the majority of participants knew enough about ARIs, with cough being the most common symptom and antibiotic usage being a problem. However, more than half of the participants had negative views and practices against ARIs.	The study emphasized the importance of raising Saudi mothers' knowledge and education about ARIs in young children. Despite the fact that the majority of participants had basic knowledge, bad attitudes and habits prevailed. To effectively



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	infants under the age of five in the Kingdom of Saudi Arabia.	The study also found that younger age, shorter marriage time, and more education were related to a better grasp and knowledge of ARIs.	prevent and manage ARIs in this population, it is critical to address these gaps and encourage appropriate attitudes and actions.
(Abusaad& Hashem, (2014).	To assess the learning needs of mothers with children under the age of five who were diagnosed with pneumonia.	According to the study, 51.1% of moms with infants who had pneumonia were between the ages of 20 and 29. Furthermore, 75% of mothers had a good degree of understanding about pneumonia, and 94.1% of their children had had episodes of pneumonia. Furthermore, 64.3% of mothers had a favorable impression of pneumonia, although 97.1% of their children had been harmed by it. The study discovered a link between mothers' level of knowledge and perception and the occurrence of pneumonia in their children.	The study's findings revealed that moms had strong knowledge and a decent level of perception of pneumonia in their hospitalized children. The offspring of young moms, on the other hand, had a higher rate of pneumonia recurrence. According to the literature, addressing maternal knowledge and perception gaps, particularly in terms of preventative and management techniques, is critical in reducing the frequency and severity of pneumonia in young children. As a result, adopting educational initiatives aimed primarily at mothers to improve their understanding of pneumonia is critical in reducing the disease's impact on young children.



**Figure1.** PRISMA 2009 Flow Diagram

## **5. DISCUSSION**

This review's findings offer insight on mothers' knowledge, attitudes, and actions in dealing with respiratory infections in their young children. In Saudi Arabia, five research found that maternal knowledge was generally inadequate (Alluqmani et al., 2017; Abusaad & Hashem, 2014). Dharmarajlu et al.'s (2022) study, on the other hand, found that educational interventions were beneficial in boosting parents' knowledge and improving their habits. The study by AlOtaibi and AlAteeq (2018) uncovered myths about asthma treatments, emphasizing the significance of evidence-based education initiatives.

In contrast, studies from Sudan's Khartoum State (Saeed et al., 2020), Yemen's Al Mukalla (Al-Noban & Elnimeiri, 2022), and Jordan's Irbid (Abu-Baker et al., 2013) revealed mothers' lack of knowledge, negative attitudes, and poor practices when managing respiratory infections in their children. The research did, however, reveal that treatments concentrating on awareness, fostering proper attitudes, and education might effectively bridge the knowledge gap and encourage appropriate healthcare-seeking behavior. In addition, Yulianita et al. (2023) explored predictors of family health management in preventive and curative care for toddlers with acute respiratory infections and discovered that knowledge, attitude, and anxiety were major factors influencing family health management. Knowledge, attitude, and anxiety were all substantially connected to family health management. According to the findings, knowledge and positivity improve family health management. Interventions that address parents' knowledge, attitudes, and emotional well-being are therefore more likely to be effective.

When we compare Saudi research to those conducted in other nations, we can see parallels and variations. Although mothers' knowledge was found to be poor in both Saudi Arabia and Sudan (Saeed et al., 2020), Khartoum State moms had a better understanding of what pneumonia is (Saeed et al., 2020). Mothers in Yemen (Al-Noban & Elnimeiri, 2022) were more aware of the dangers of ARIs, whereas mothers in Jordan were more knowledgeable about fever care (Abu-Baker et al., 2013). These findings imply that mothers' knowledge and awareness of symptoms and treatments differ based on cultural and social setting.

Only in Sudan was a predilection for traditional and alternative medicine observed (Saeed et al., 2020). In Yemen, however, urban moms were more likely than rural mothers to use antibiotics without a prescription (Al-Noban & Elnimeiri, 2022). These findings suggest that cultural and societal factors influence healthcare-seeking behavior and that interventions should be customized accordingly.

Finally, interventions in both Saudi Arabia and Sudan were beneficial in enhancing mothers' knowledge and habits (Dharmarajlu et al., 2022; Saeed et al., 2020). Similarly, the relevance of maternal education programs was stressed in Jordan (Abu-Baker et al., 2013). These findings imply that interventions focused at increasing mothers' knowledge and habits can be effective independent of cultural or social setting.

## **6. CONCLUSION**

In conclusion, the research reviewed suggest that there is room for improvement in mothers' knowledge, attitudes, and actions regarding the management of respiratory infections in their young children. While some Saudi moms have appropriate knowledge and awareness, the majority were judged to be deficient in this area. Educational initiatives, on the other hand, have been demonstrated to be helpful in raising mother awareness and improving practices. The studies also emphasize the need of addressing cultural and societal variables that influence healthcare-seeking behavior and the usage of complementary and alternative treatments. Overall, tailored interventions aimed at raising mothers' awareness and supporting evidence-based practices are critical in improving the treatment of respiratory infections in young infants.

## **7. RECOMMENDATIONS**

- Develop and implement educational programs for Saudi moms aimed at boosting their awareness and understanding of pediatric respiratory illnesses. These programs should teach people about prevention, early detection of symptoms, appropriate treatment, and when to seek medical attention.
- Work with healthcare providers and community organizations to communicate information about respiratory infections and the necessity of proactive management. Workshops, seminars, and community outreach activities can help with this.

- Stress the significance of evidence-based methods and oppose the use of alternative treatments without competent medical supervision. Provide clear guidance on pharmaceutical use and the potential hazards of antibiotic overuse.
- Encourage healthcare personnel to interact actively with moms during clinic visits in order to deliver accurate information, address concerns, and reinforce proper treatment strategies.

## **8. IMPLICATIONS OF THE STUDY**

- Improving mothers' knowledge, attitudes, and behaviors about childhood respiratory infections can lead to better healthcare-seeking behavior, early intervention, and better outcomes for children.
- Putting in place comprehensive educational programs and interventions can help reduce the impact of respiratory illnesses on families, healthcare systems, and society as a whole.
- Interventions can be modified to fit the individual needs and preferences of diverse groups by addressing cultural and socioeconomic factors that influence healthcare-seeking behavior.
- The outcomes of these research can be used to improve policy decisions and healthcare practices targeted at better managing respiratory infections in young children.

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